



September 23, 2011

VX-31 flies Harrier on biofuel blend for the first time



Harrier #88 flies over the Geothermal Plant located on Naval Air Weapons Station (NAWS) China Lake, Wednesday, Sept. 21. (U.S. Navy photo)

CHINA LAKE, Calif., — Naval Air Warfare Center Weapons Division (NAWCWD), China Lake performed the first bio-fuel flight test in AV-8B Harrier #88, Sept. 21 over NAWCWD's land ranges in the upper Mojave Desert.

After preliminary ground test events earlier in the week, the Harrier was flown by Maj. Gary "Mouth" Shill, a pilot from Air Test and Evaluation Squadron (VX) 31 at NAWCWD. According to Hal Bennett, project lead for the AV-8B bio fuel flight test program, the testing was flawless. Harrier #88 rolled down the runway several hundred feet before a short take off, then accelerated into a maximum performance climb. Testing included phasing maneuvers, hard cranks, wind up turns, hard turns with nozzle biting and even some inverted flight.

"We usually have small challenges in a test flight," Bennett stated, "but not on this one. We hit all the points – collecting the numbers and rolling through the complete card deck in an hour. It was very successful."

The last portion of the flight included performance hover maneuvers. The Harrier came in slow, about 100 feet off the



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ground, into a hover,” said Bennett. “It hovered for about two minutes to establish some engine performance parameters – to see how powerful the engine was at a given temperature. Shill depressed the rudders and moved the ailerons to check and validate the pitch, roll, yaw and hover characteristics. This allowed him to monitor and evaluate what impacts the ‘bleed air’ usage had upon engine performance. Again, no anomalies noted.”

The test concluded when the pilot conducted a vertical landing and idled the motor a short time to let it cool. Shill said the Harrier performed on the 50/50 blend as it does with standard JP8. “There were no anomalies that I detected that would prevent the Navy from using the biofuels blend for the AV-8B,” he said.

“The instrumentation worked flawlessly,” Bennett said. “We conducted the test, captured the data and then debriefed. The NAWCWD Range Control Center folks were terrific. We usually have challenges during a test flight, but this whole thing went according to script.”



Hal Bennett, project lead for the AV-8B bio fuel flight test program, coordinated and supervised the NAWCWD China Lake test event, Sept. 21. (U.S. Navy photo)



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NAWCWD Air Test and Evaluation Squadron (VX) 31 test pilot, Maj. Gary "Mouth" Shill flew Harrier #88 in an historic biofuels test event over the Land Ranges of China Lake on Wednesday, Sept. 21. (U.S. Navy photo)



Harrier #88, flown by USMC Maj. Gary "Mouth" Shill, going vertical in a climb over China Lake Land Ranges, during the biofuels test flight. (U.S. Navy photo)



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Following a successful biofuels test flight, Maj. Gary Shill exits the cockpit of Harrier #88 at the China Lake airfield. (U.S. Navy photo)